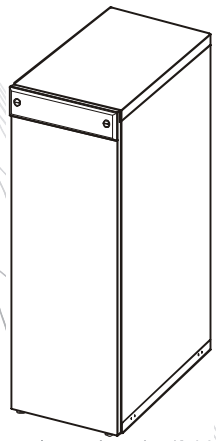
APC by Schneider Electric

Installation

MGE™ Galaxy™ 3500 XR Battery Enclosure

10-40 kVA 380/400/415 V
10-30 kVA 208/220 V



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Safety

IMPORTANT SAFETY INSTRUCTIONS - SAVE THESE INSTRUCTIONS

Warning:

- **ALL safety instructions in the Safety Sheet (990-2940) must be read, understood, and followed when installing the UPS system. Failure to do so could result in equipment damage, serious injury, or death.**
- **The UPS system does not have built-in disconnection devices for AC input/output and DC input. The customer must provide AC input/output over-current protection and an AC output disconnect device.**
- **After the UPS has been electrically wired, do not start it. Start-up is commissioned to authorized personnel from Schneider Electric.**

Mechanical Assembly

Floor-anchoring Preparation (Optional)

Note: If floor anchoring and battery securing is required, read this section. If not, see *"Remove the front panel" on page 6.*

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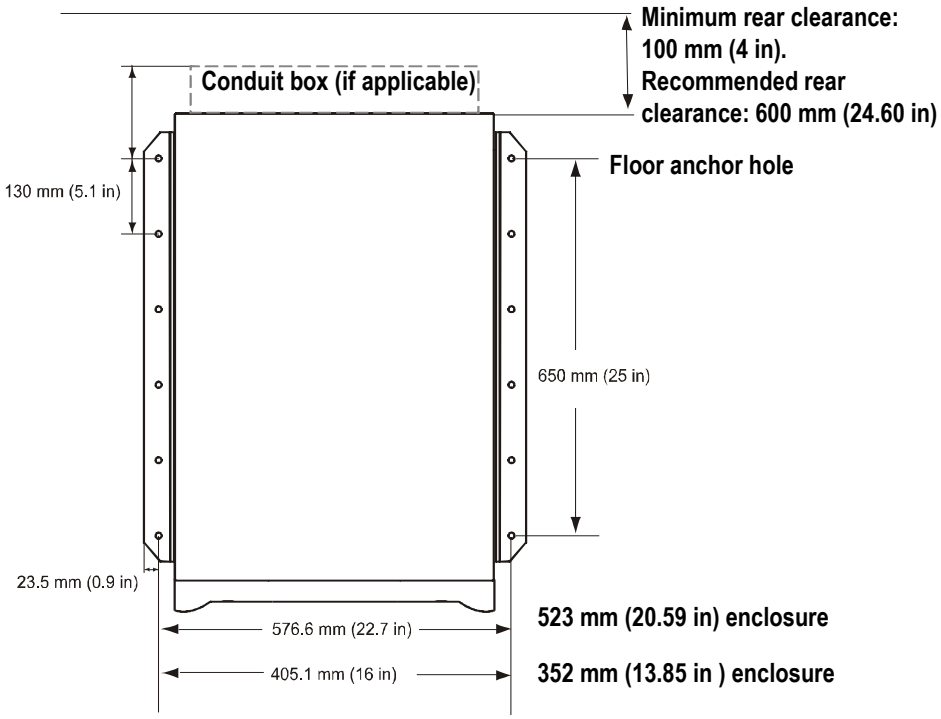
Note: If your UPS installation requires seismic protection, the UPS installation must be anchored to the floor, re-using the brackets that also secured the enclosure to the pallet during shipment. Refer to the applicable seismic drawing.

Hole positions for a stand-alone UPS enclosure - 353 mm (13.85 in) and 523 mm (20.59 in)

Note: Recommended minimum number of floor bolts per enclosure is four; one in each corner. Recommended floor bolt size: M8 mm (0.31 in).


Minimum rear clearance:
100 mm (4 in).
Recommended rear
clearance: 600 mm (24.60 in)
Conduit box (if applicable)
Floor anchor hole
130 mm (5.1 in)
650 mm (25 in)
23.5 mm (0.9 in)
576.6 mm (22.7 in)
405.1 mm (16 in)
523 mm (20.59 in) enclosure
352 mm (13.85 in) enclosure

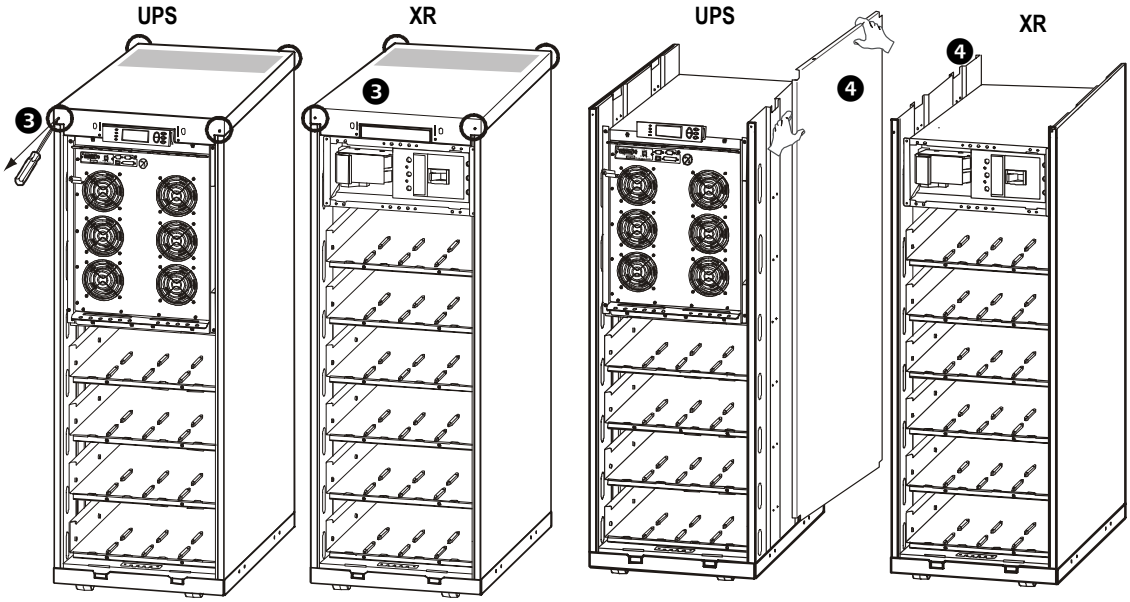
Hole positions for the XR Battery Enclosure(s) with the UPS

Note: If you need hole positions for XR Battery Enclsoure(s) with the UPS, please visit the APC Website (see the back cover) to access the Site Preparation manual (npn-00207) for more information on system arrangements.

Anchor the UPS and the Adjacent XR Battery Enclosures (Optional)

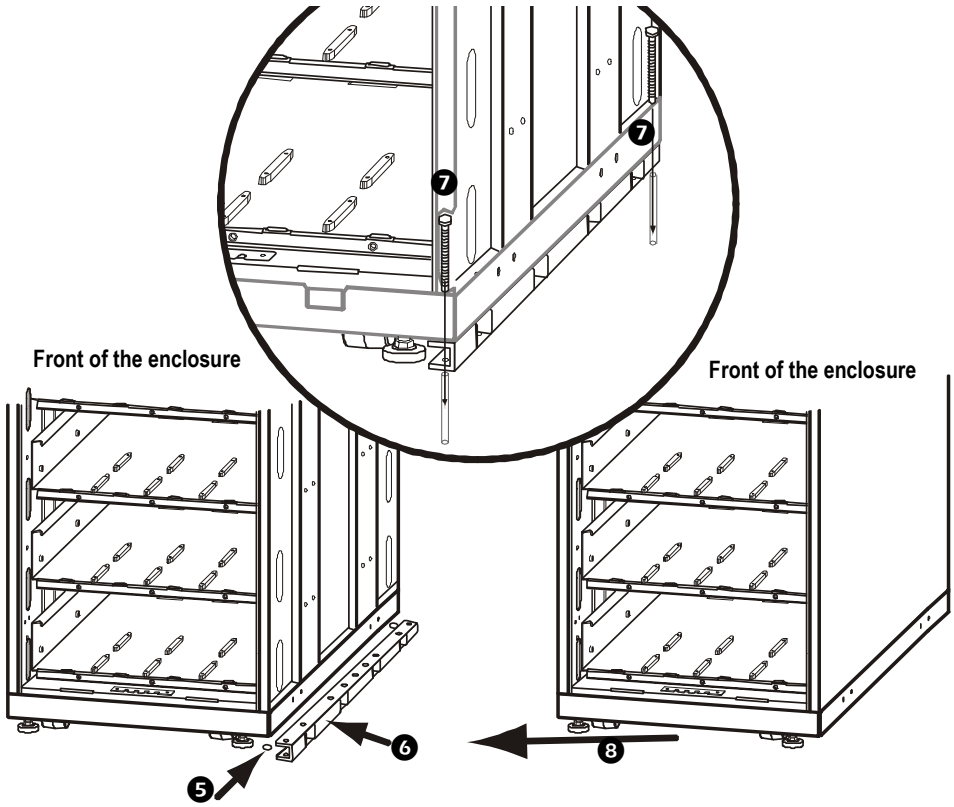
❶ Remove the front panel, see *"Remove and Install the Front Panel" on page 6*.

❷ Remove all batteries from the enclosures, see *"Remove the Battery Modules" on page 8*



❸ Remove the four screws from the top covers of the UPS and XR Battery Enclosure(s).

❹ Remove the side panels from the UPS and XR Battery Enclosure(s).



❺ Follow the specifications provided by the manufacturer of the floor anchors.

❻ Position the interconnection bracket for floor anchoring beneath the UPS (or XR Battery Enclosure).

❼ Insert two floor anchors through holes in the bottom of the enclosure, through holes in the interconnection bracket, and into the pre-drilled floor holes.

❽ Move the other enclosure close to the enclosure just anchored.

Note: If the second enclosure is already on its levelling feet, use a forklift or pallet jack to move it into position.

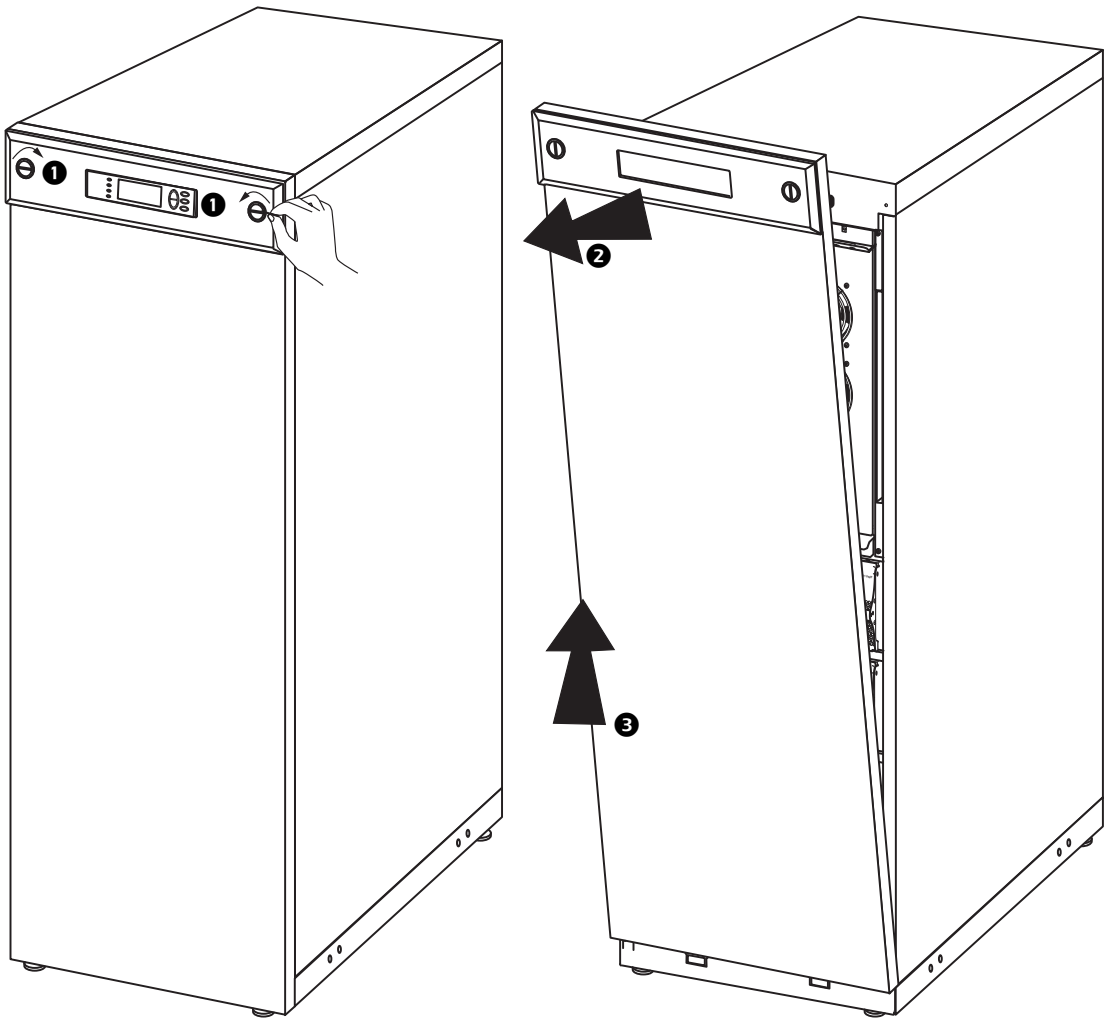
❾ Insert interconnection plates before pushing the two enclosures together and then bolt the two enclosures together.

See *"Bolt together the enclosures" on page 12*.

Remove and Install the Front Panel

Remove the front panel

Note: Remove the front panel now and reinstall it after completion of the installation procedures.

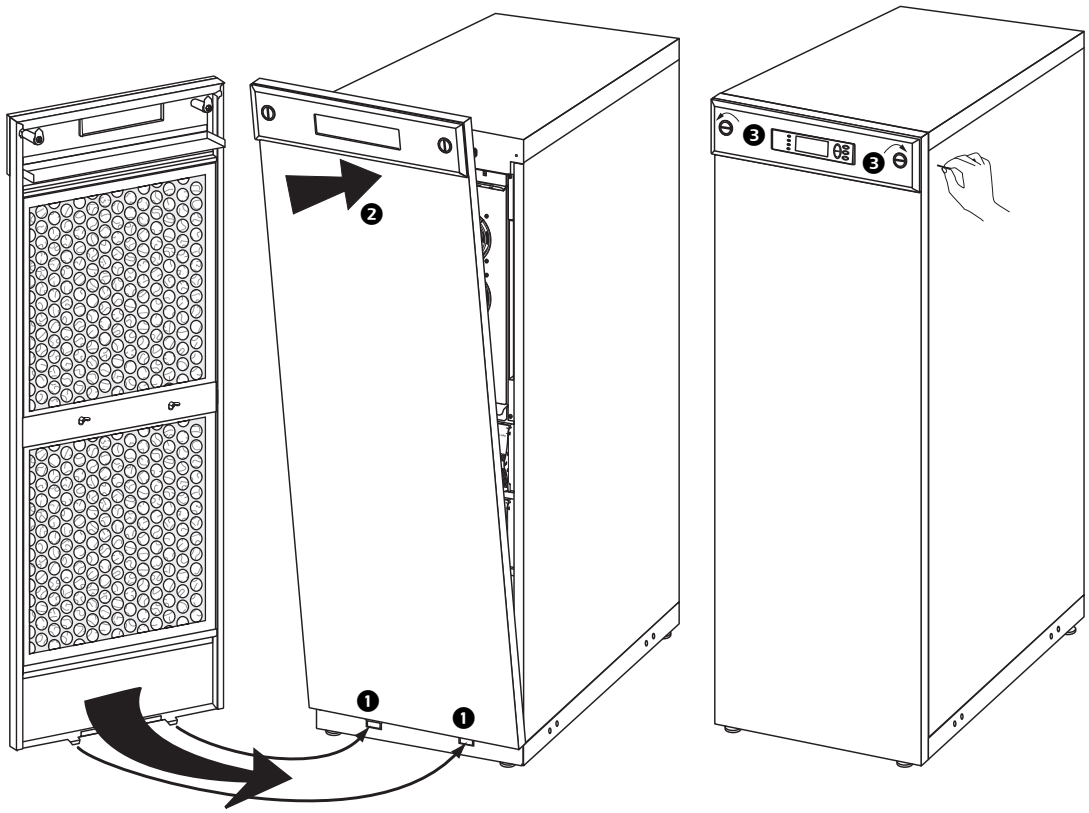


❶ Use a coin or similar to turn the two black lock devices on either side of the display in the direction of each other to a vertical position.

❷ Push the front panel upwards and pull it outwards to disengage the locking device at the top of the enclosure.

❸ Lift the front panel free of the two slots at the bottom of the enclosure.

Reinstall the front panel



❶ Insert the two taps at the bottom of the front panel into the two slots at the bottom of the enclosure.

❷ Push the front panel forward until it engages the locking devices at the top of the enclosure.

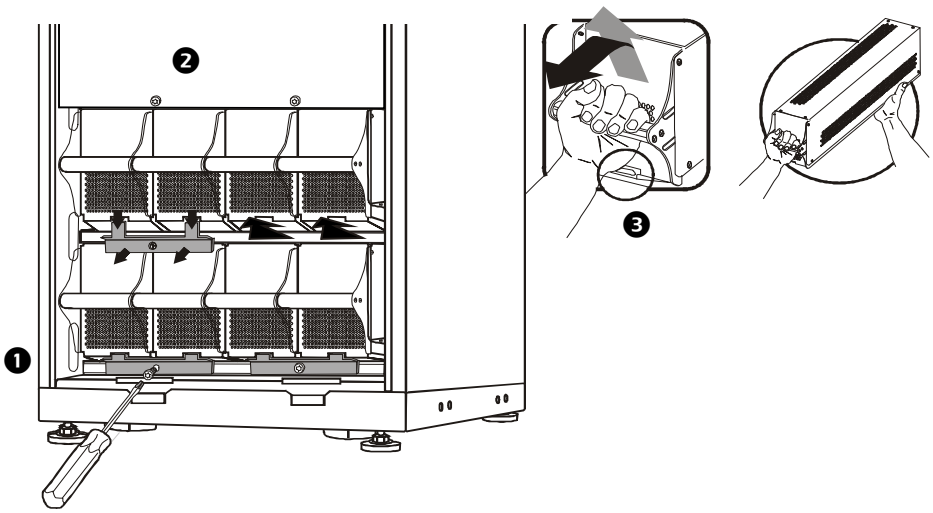
❸ Use a screwdriver to set the lock mechanism to the locked position.

Remove the Battery Modules

Warning: Before you carry out the next procedure, you must follow the Total Power Off procedure in the Safety Sheet (990-2940).

Heavy: Use two people to lift components weighing between 18-32 kg (40-70 lb).

Note: The XR Battery Enclosures ship with two battery modules. All battery modules in the UPS and the XR Battery Enclosure(s) must be removed before interconnecting these enclosures.



❶ Remove all battery securing brackets (used to secure the batteries during transport) by removing the M6 Torx screws.

❷ Remove the blind plate.

Note: When you remove battery modules, start from the highest row and work down.

❸ To release the battery from its lock mechanism, gently push the battery upwards and then pull it out while supporting the battery with your other hand.

Power and Communication Cables

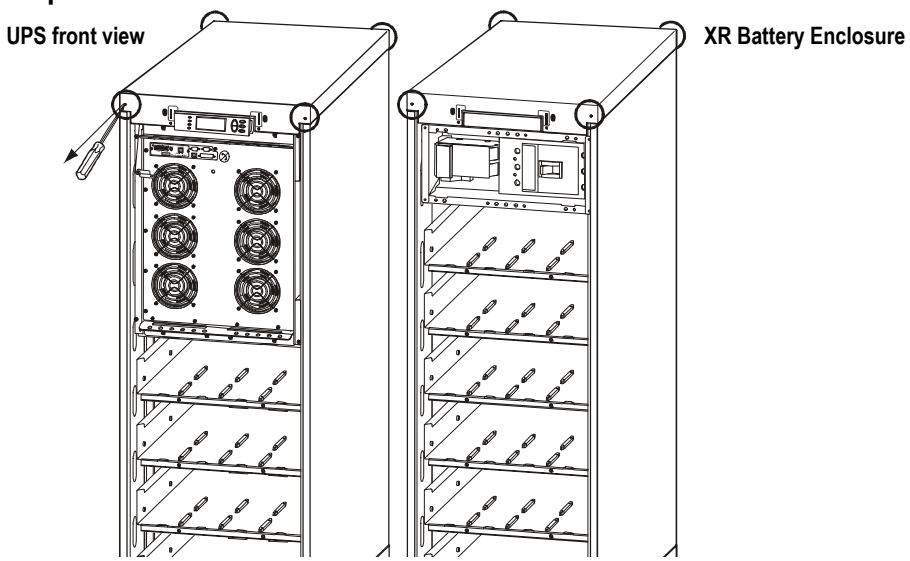
Warning: Before you carry out the steps below, you must follow the Total Power Off procedure in the Safety Sheet (990-2940).

See *"Connect Power and Communication Cables in Installations with Busbar Connections" on page 10* or *"Connect Power and Communication Cables in Installations with Cable Connections" on page 19.*

Connect Power and Communication Cables in Installations with Busbar Connections

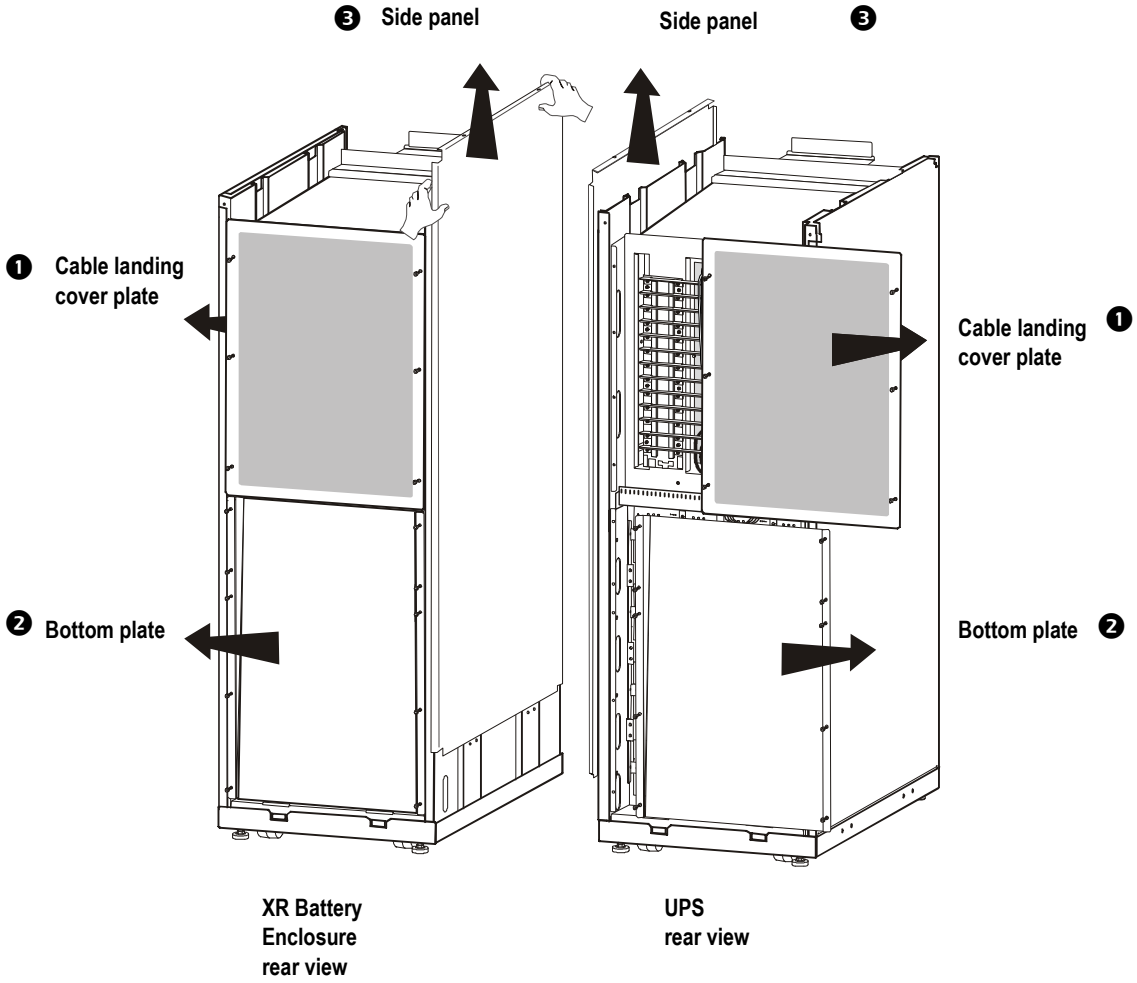
Prepare for cables

Remove the top cover.



Remove the four screws from the top cover (one in each corner) of the UPS and XR Battery Enclosure(s) and then lift the covers off the enclosures.

Remove the cable landing cover, bottom plates, and side panels.



Before you carry out the below procedure see Installation Sheet 990-1957 for information on how to remove the conduit box (only applicable for 208 V systems).

❶ Loosen the six M4 screws from the cable landing cover plate on the UPS and XR Battery Enclosure(s) and remove the plates.

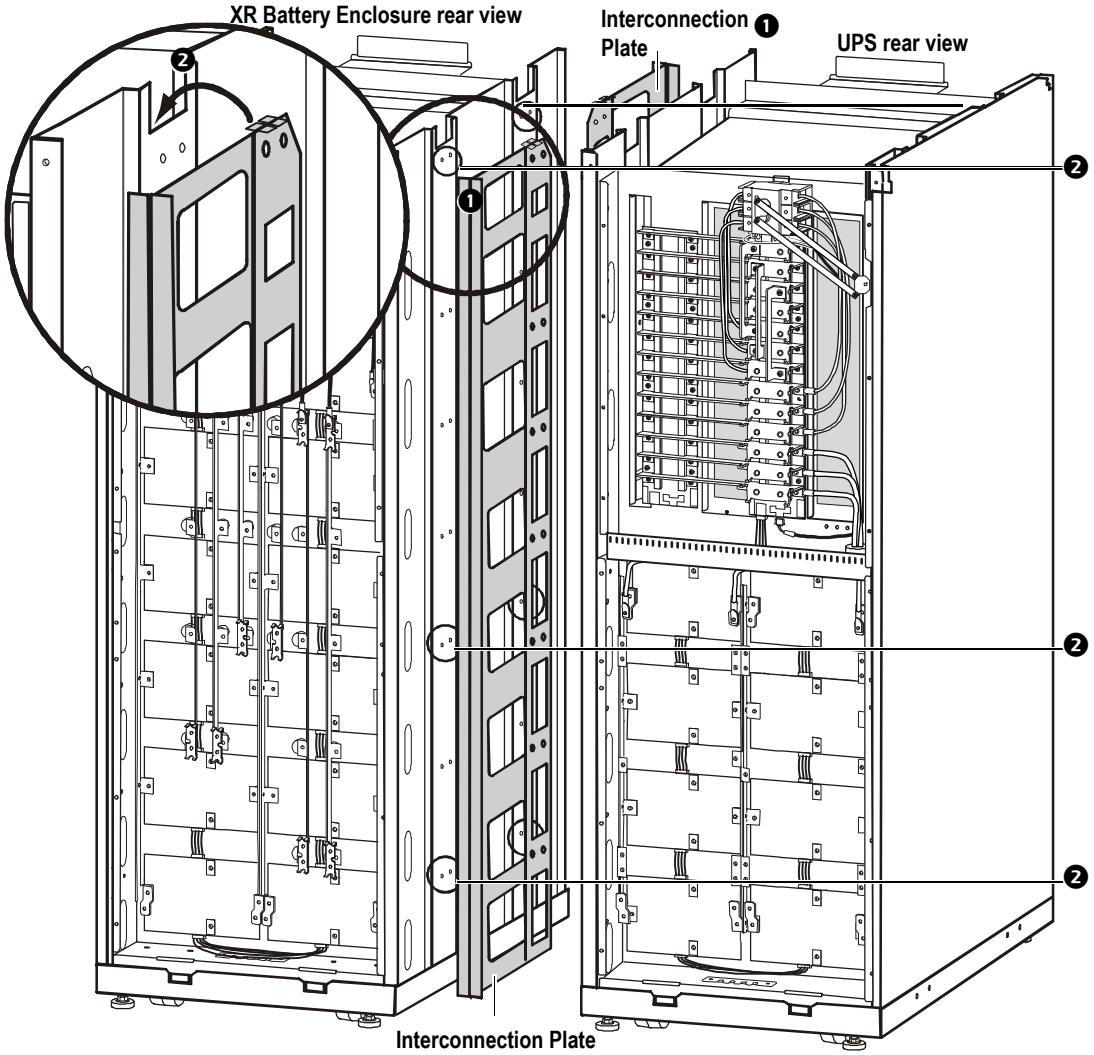
❷ Remove the screws from the bottom plate on the UPS and XR Battery Enclosure(s) and remove the plates.

❸ Lift the adjacent side panels from the UPS and XR Battery Enclosure(s).

Bolt together the enclosures

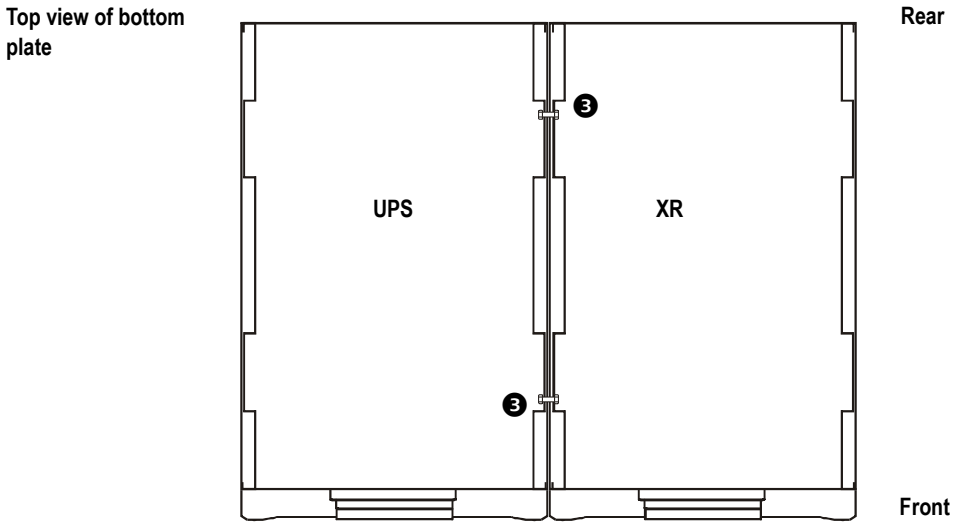
Note: The following baying kits are available:

G35TOPT004: 351 mm (14 in) UPS Enclosure toXR, G35TOPT005: 523 mm (20 in) UPS Enclosure to XR, G35TOPT006: XR to XR.



1. Insert the interconnection plates (shipped in the XR Battery Enclosure accessory kit) between the UPS and the XR Battery Enclosure. One is positioned toward the front and the other toward the rear. Note how the “wings” on the interconnection plates rest in slots at the top of the inner panel on the XR Battery Enclosure.
2. Align the two enclosures and level the three marked rows of bolt holes in the UPS with the holes in the XR Battery Enclosure. Push the two enclosures firmly together.

Note: If the second enclosure is already on its levelling feet, use a forklift or pallet jack to move it into position.



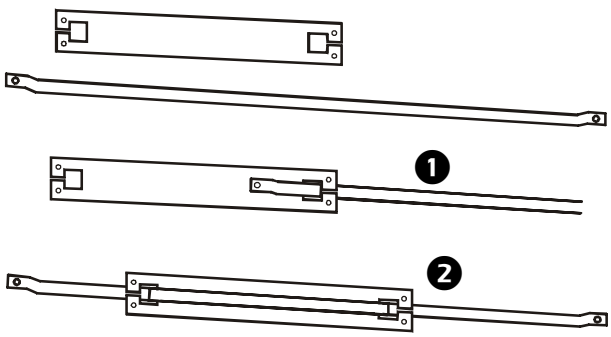
❸ Bolt the two enclosures together by using the six M6 screws shipped in the XR Battery Enclosure accessory kit: join one hole at the front and one hole at the rear of the enclosures on three levels.

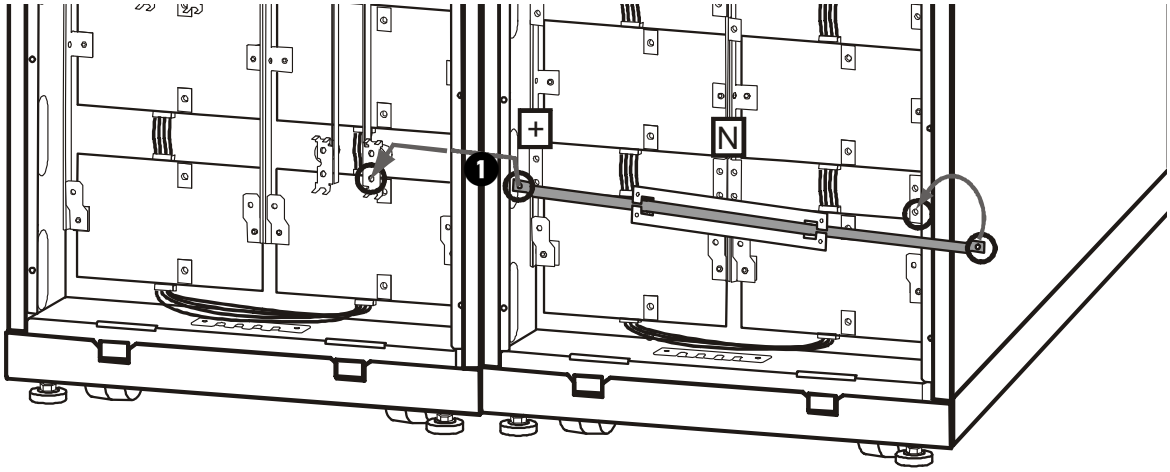
❹ Reinstall the top cover.

Install isolators

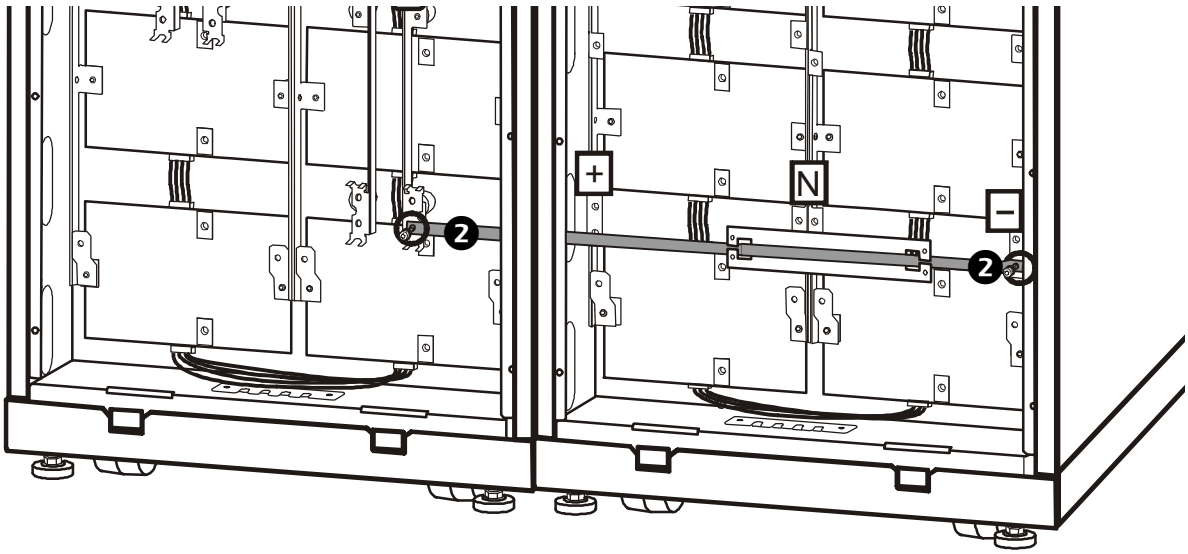
See *"Specifications" on page 30* for torque specification.

The isolators separate the baying kit busbar from the six vertical busbars in each XR Battery Enclosure, and the +, N, and ÷ busbars in the UPS. This is how the isolators are fitted to their busbar:

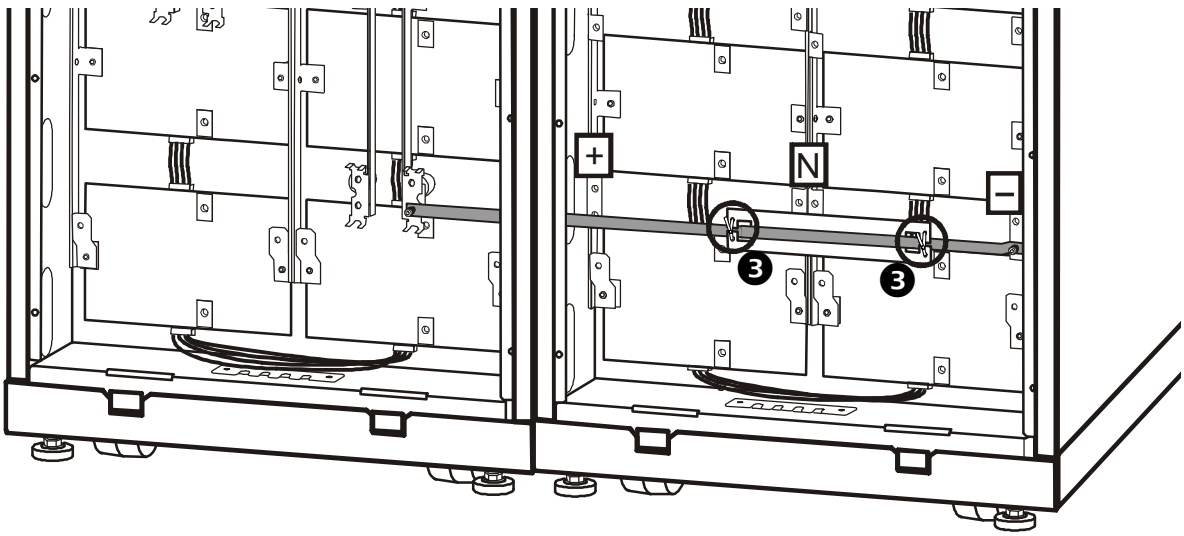




❶ Guide the isolator busbar through the adjacent side panels.



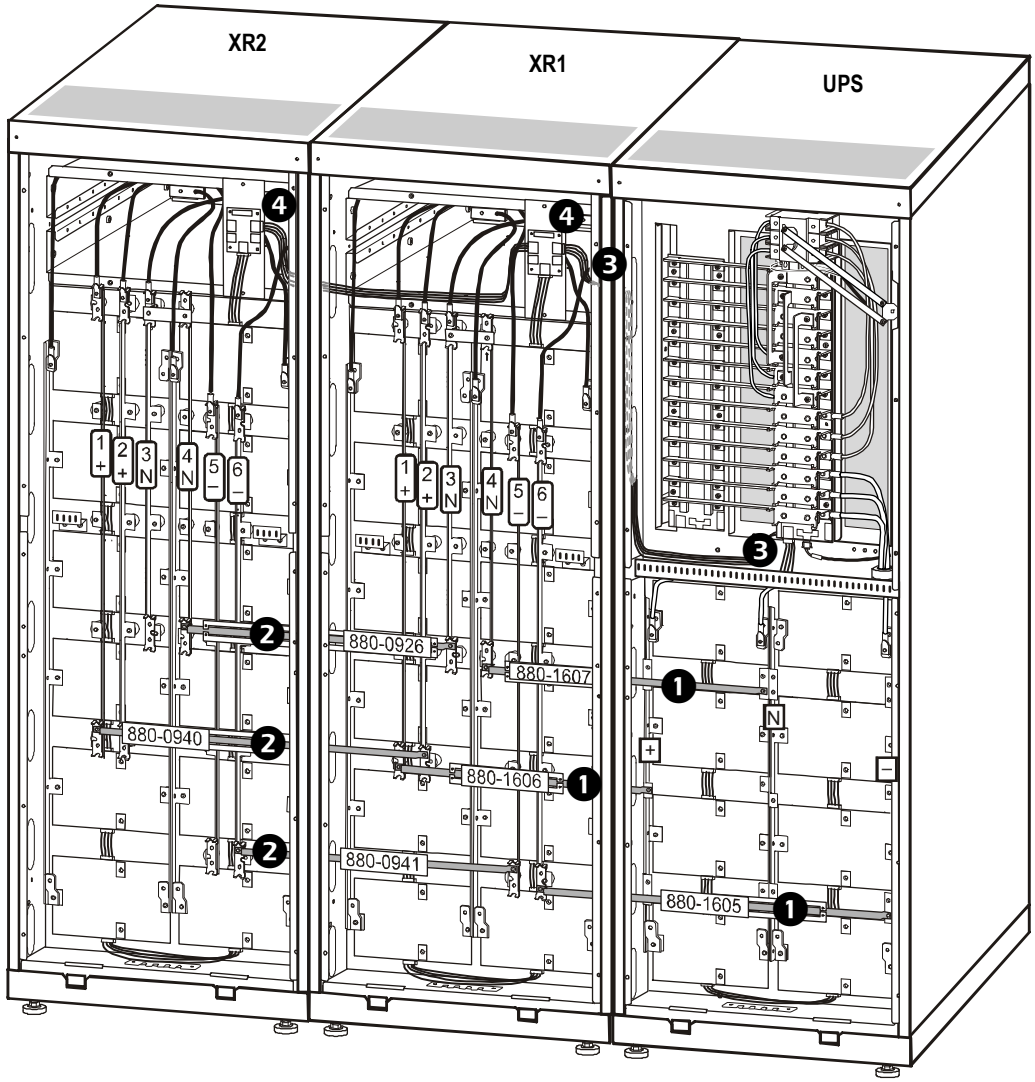
❷ Position the isolators across the vertical busbars (N in this example) and then fasten the isolator busbar by using the provided M5 Torx screws.



❸ Secure the isolator to its busbar with cable ties.

Connect busbars and communication cables

523 mm (20.59 in) UPS System with the UPS placed to the left (seen from the front).



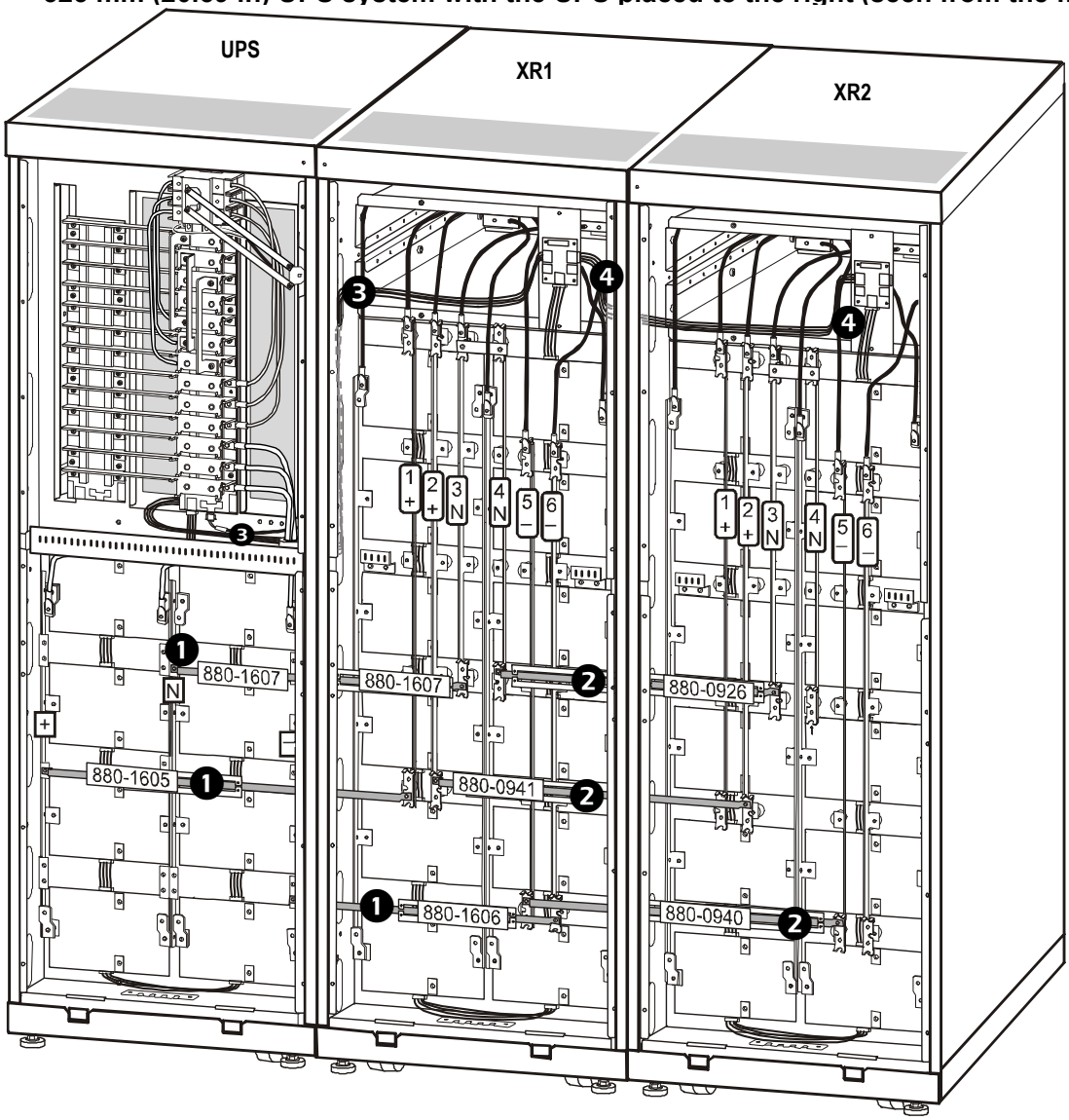
❶ Install the following baying kit busbars between the UPS and XR1:
880-1607 between the vertical busbar N on the UPS and busbar 4 on XR1
880-1606 between the vertical busbar + on the UPS and busbar 1 on XR1
880-1605 between busbar – on the UPS and busbar 6 on XR1

❷ Install the following baying kit busbars between the two XR Battery Enclosures:
880-0926 between the vertical busbar 3 on XR1 and busbar 4 on XR2
880-0940 between the vertical busbar 2 on XR1 and busbar 1 on XR2
880-0941 between the vertical busbar 5 on XR1 and busbar 6 on XR2

❸ Run the communication cable through the holes in the side panel between the UPS and XR1, from the J106 pin connection in the UPS to the J200 pin connection in XR1.

❹ Run the communication cable from the J204 pin connection in XR1 to the J200 pin connection in XR2.

523 mm (20.59 in) UPS system with the UPS placed to the right (seen from the front).



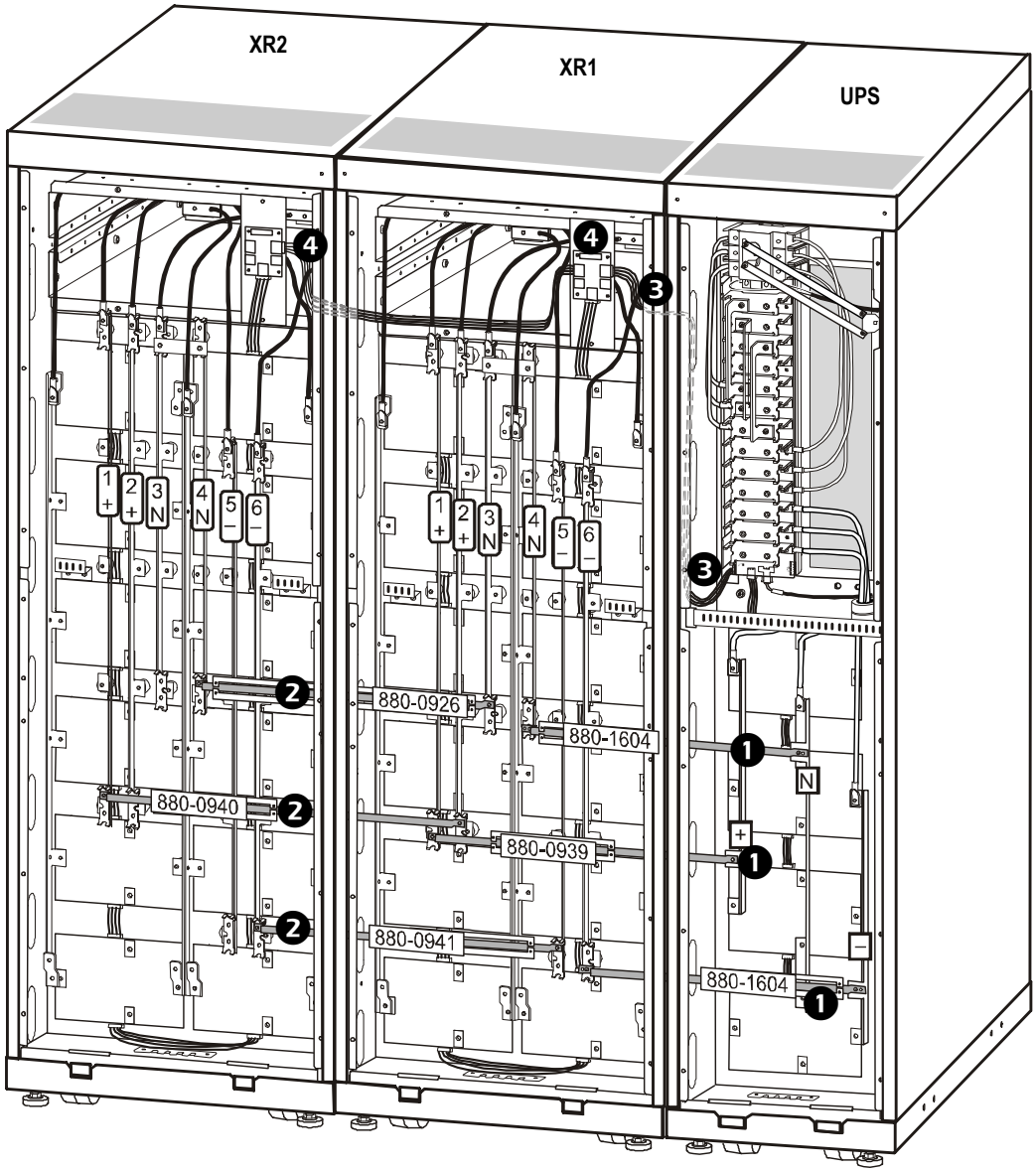
❶ Install the following baying kit busbars between the UPS and XR1:
880-1607 between the vertical busbar N on the UPS and busbar 3 on XR1
880-1605 between vertical busbar + on the UPS and busbar 1 on XR1
880-1606 between vertical busbar – on the UPS and busbar 6 on XR1

❷ Install the following baying kit busbars between the two XR Battery Enclosures:
880-0926 between the vertical busbar 4 on XR1 and vertical busbar 3 on XR2
880-0941 between the vertical busbar 2 on XR 1 and vertical busbar 2 on XR2
880-0940 between the vertical busbar 5 on XR1 and vertical busbar 5 on XR2

❸ Run the communication cable through the holes in the side panel between the UPS and XR1, from the J106 pin connection in the UPS to the J200 pin connection in XR1.

❹ Run the communication cable from the J204 pin connection in XR1 to the J200 pin connection in XR2.

352 mm (13.85 in) UPS system with the UPS placed to the right (seen from the front).



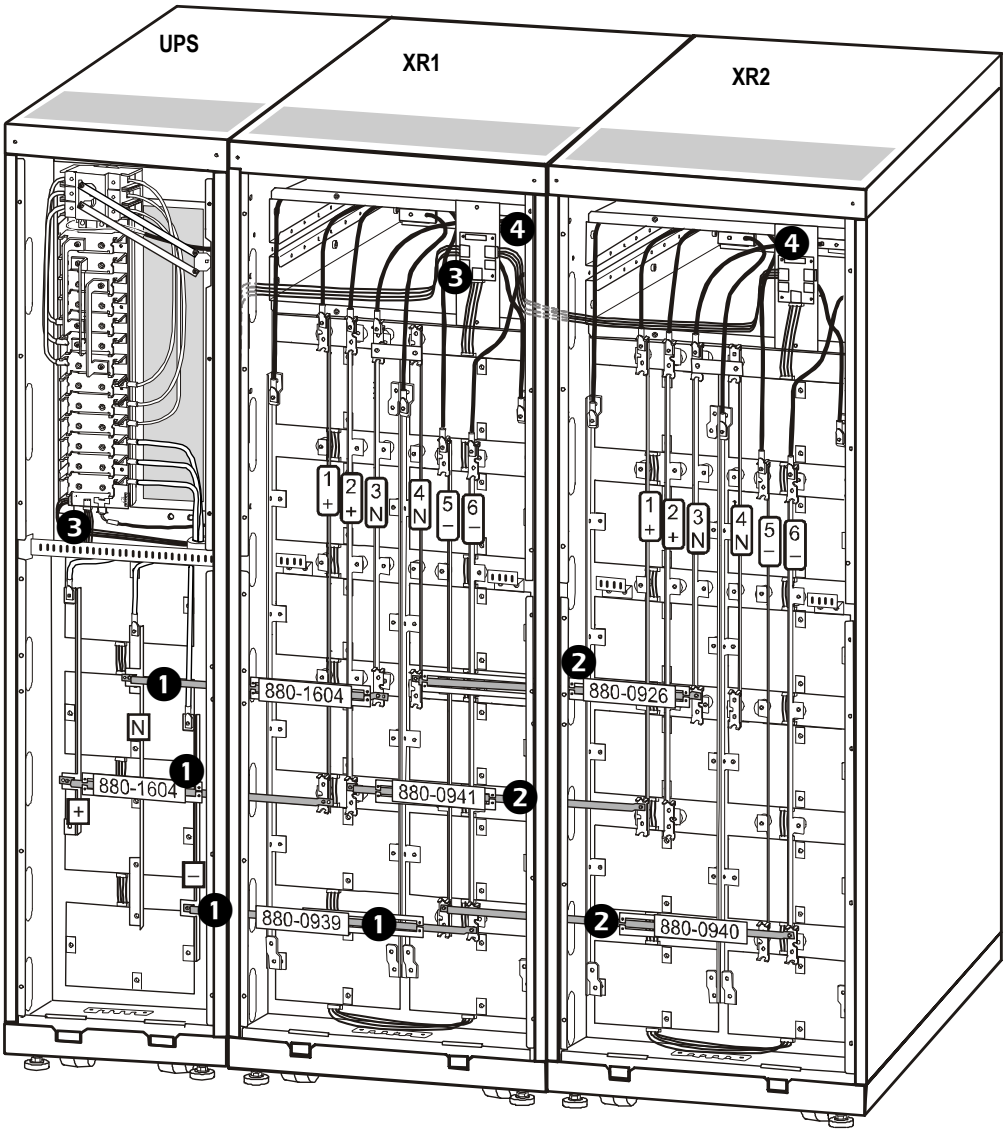
❶ Install the following baying kit busbars between the UPS and XR1:
880-1604 between the vertical busbar N on the UPS and busbar 4 on XR1
880-0939 between the vertical busbar + on the UPS and busbar 1 on XR1
880-1604 between the vertical busbar – on the UPS and busbar 6 on XR1

❷ Install the following baying kit busbars between two XR Battery Enclosures:
880-0926 between the vertical busbar 3 on XR1 and busbar 4 on XR2
880-0940 between the vertical busbar 2 on XR1 and busbar 1 on XR2
880-0941 between the vertical busbar 5 on XR1 and busbar 6 on XR2

❸ Run the communication cable through the holes in the side panels between the UPS and XR1, from the J106 pin connection in the UPS to the J200 pin connection in the XR1.

❹ Run the communication cable from the J204 pin connection in XR1 to the J200 pin connection in XR2.

352 mm (13.85 in) UPS system with the UPS placed to the left (seen from the front).



❶ Install the following baying kit busbars between the UPS and XR1:
880-1604 between the vertical busbar N on the UPS and busbar 3 on XR1
880-1604 between the vertical busbar + on the UPS and busbar 1 on XR1
880-0939 between the vertical busbar – on the UPS and busbar 6 on XR1

❷ Install the following baying kit busbars between two XR Battery Enclosures:
880-0926 between the vertical busbar 4 on XR1 and vertical busbar 3 on XR2
880-0941 between the vertical busbar 2 on XR1 and vertical busbar 2on XR2
880-0940 between the vertical busbar 5 on XR1 and vertical busbar 6 on XR2

❸ Run the communication cable through the holes in the side panel between the UPS and XR1, from the J106 pin connection in the UPS to the J200 pin connection in XR1.

❹ Run the communication cable from the J204 pin connection in XR1 to the J200 pin connection in XR2.

See *"Connect the EPO" on page 26*

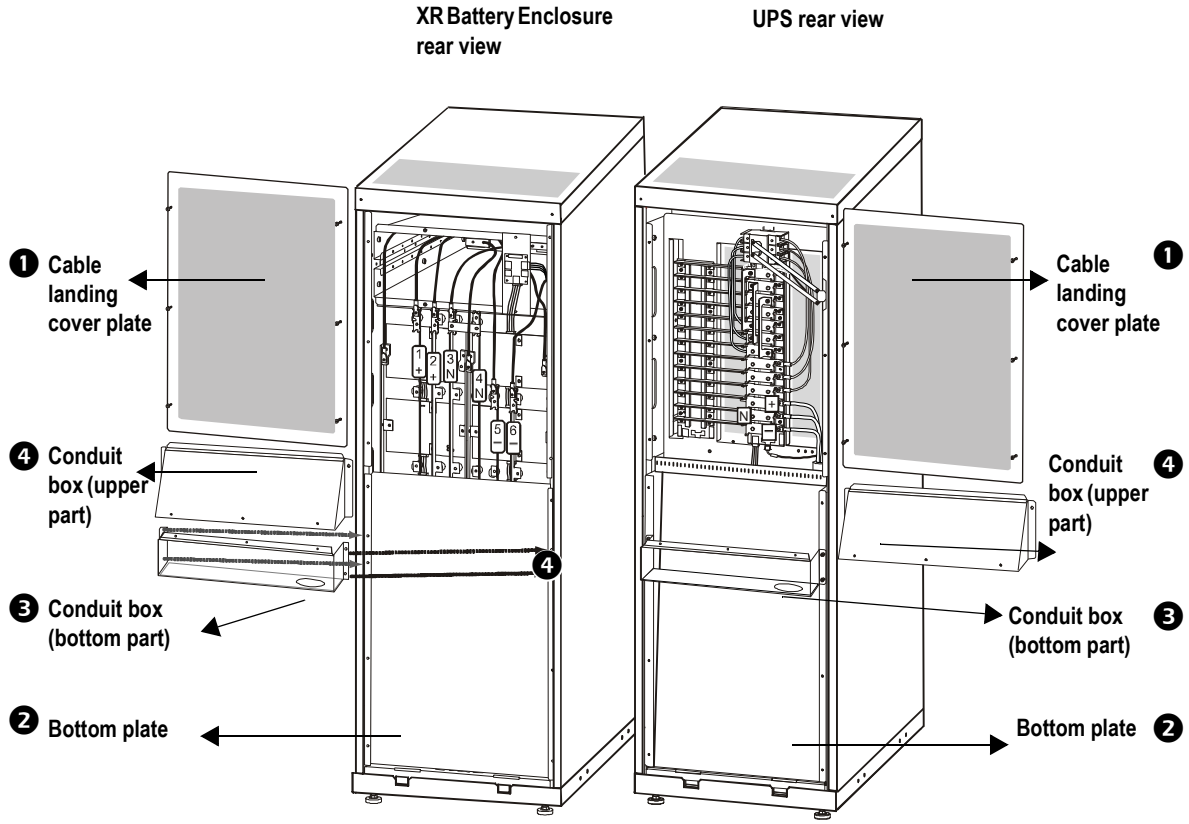
Connect Power and Communication Cables in Installations with Cable Connections

Prepare for cables

Warning: Before you carry out the steps below, you must follow the Total Power Off procedure in the Safety Sheet (990-2940).

Remove cable landing cover and cover plates.

To access the cable landing area in the UPS and the XR Battery Enclosure(s), follow this procedure:


XR Battery Enclosure rear view
UPS rear view
1 Cable landing cover plate
4 Conduit box (upper part)
3 Conduit box (bottom part)
2 Bottom plate
1 Cable landing cover plate
4 Conduit box (upper part)
3 Conduit box (bottom part)
2 Bottom plate
4

1. Loosen the six M4 screws from the cable landing cover plate on the UPS and the XR Battery Enclosure(s) and then remove the plates.
2. Remove the screws from the bottom plate on the UPS and the XR Battery Enclosure(s) and then remove the plates.
3. Punch holes in the bottom of the conduit boxes (optional for 400 V) to fit the size of the conduit pipes.

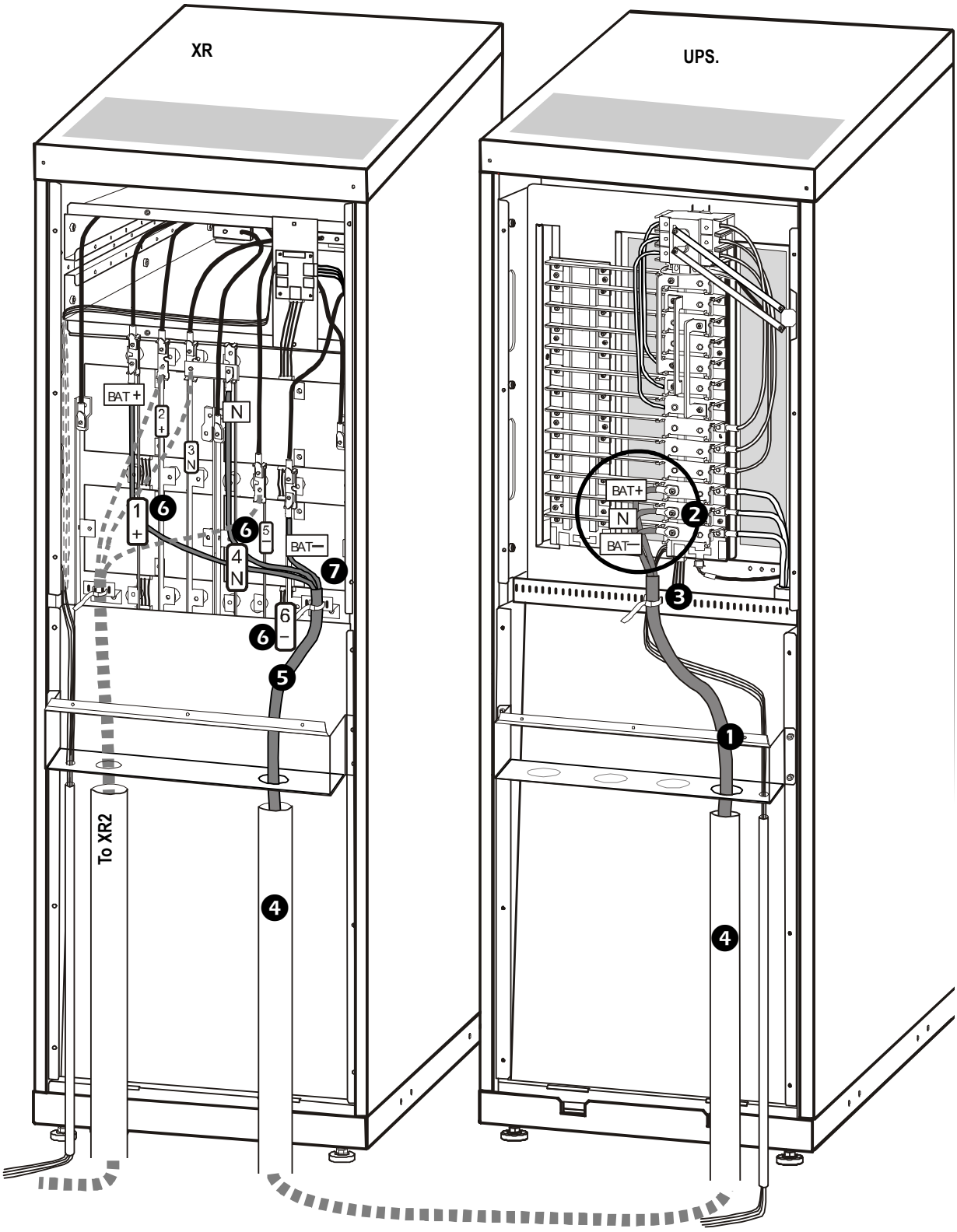
Note: The conduit box is not included in 400 V versions, but can be purchased (SUVTOPT001: 10-20 kVA UPS, SUVTOPT002: 10-40 kVA UPS plus XR Battery Enclosure).

❹ Attach the bottom part of the conduit boxes to the back of the UPS and the back of the XR Battery Enclosure, respectively with four screws each (if applicable). The bottom part of the conduit box is secured to the enclosure with four screws.

Install the power cables and the communication cables

See *"Recommended cable sizes" on page 30.*

Install the power cables between the UPS and the XR Battery Enclosure.



❶ In the UPS, feed the cable up through the conduit box or through the transparent cable route bracket (not shown).

❷ Connect the Bat+, Bat–, and N cables to the busbars in the UPS.

❸ Secure the cables to the perforated bracket with cable ties.

❹ Equip the cable with conduits (if applicable).

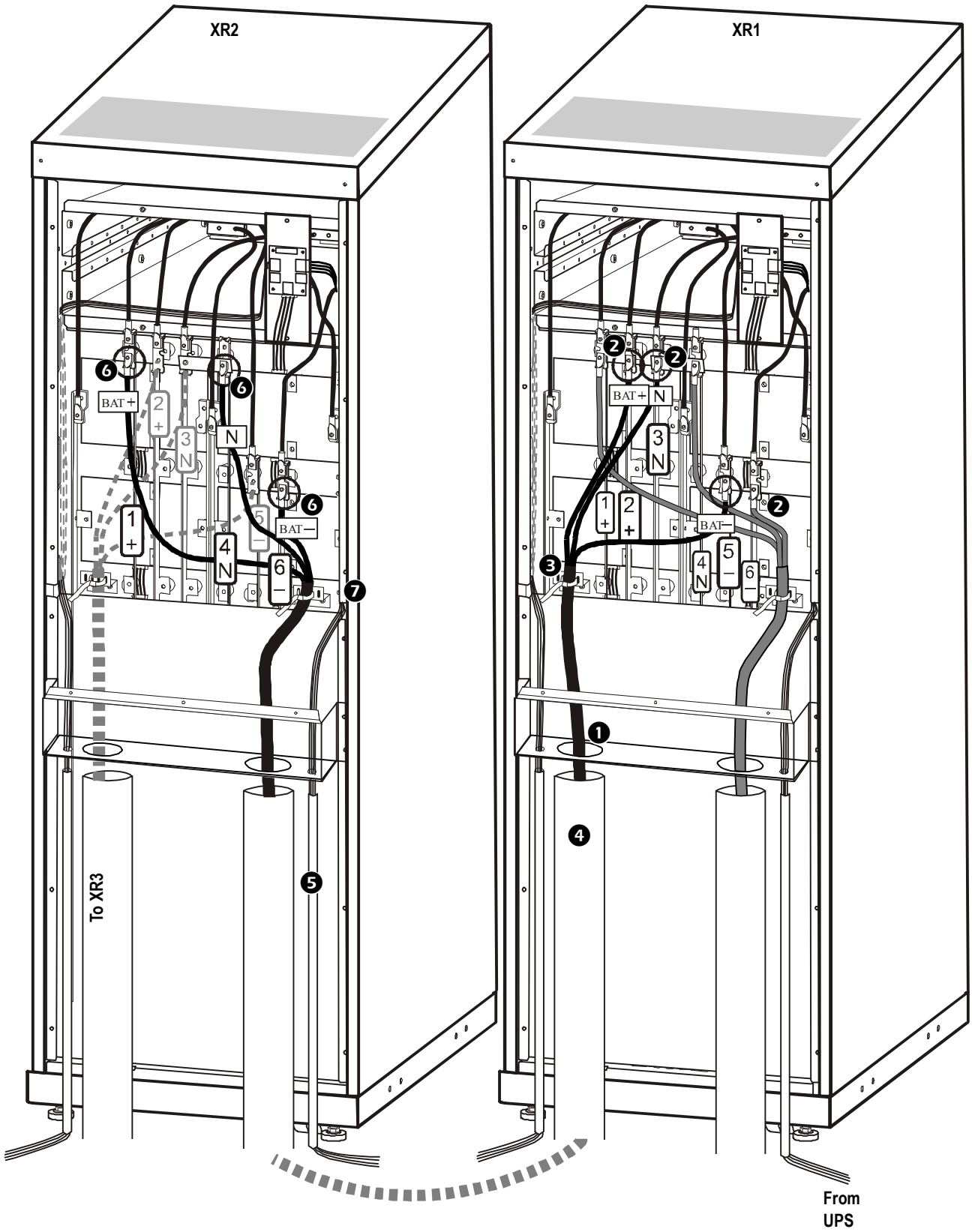
❺ In the XR Battery Enclosure, feed the cable up through the conduit box (if applicable) to the cable landing area.

❻ Connect the + cable to busbar no. 1 (+), connect the N cable to the busbar no. 4 (N), and the – cable to busbar no. 6 –.

❼ Secure the cable to the perforated bracket with cable ties.

❽ Attach the top part of the conduit box (if applicable).

Install the power cables between two XR Battery Enclosures.



❶ Feed the cable up through the conduit box on XR1 or through the transparent cable route bracket (not shown) to the cable connection area.

❷ Connect the – cable to busbar no. 5 (–), the N cable to busbar no. 3 (N), and the + cable to busbar no. 2 (+) in XR1.

❸ Secure the cable to the perforated bracket with cable ties.

❹ Equip the cable with conduits (if applicable).

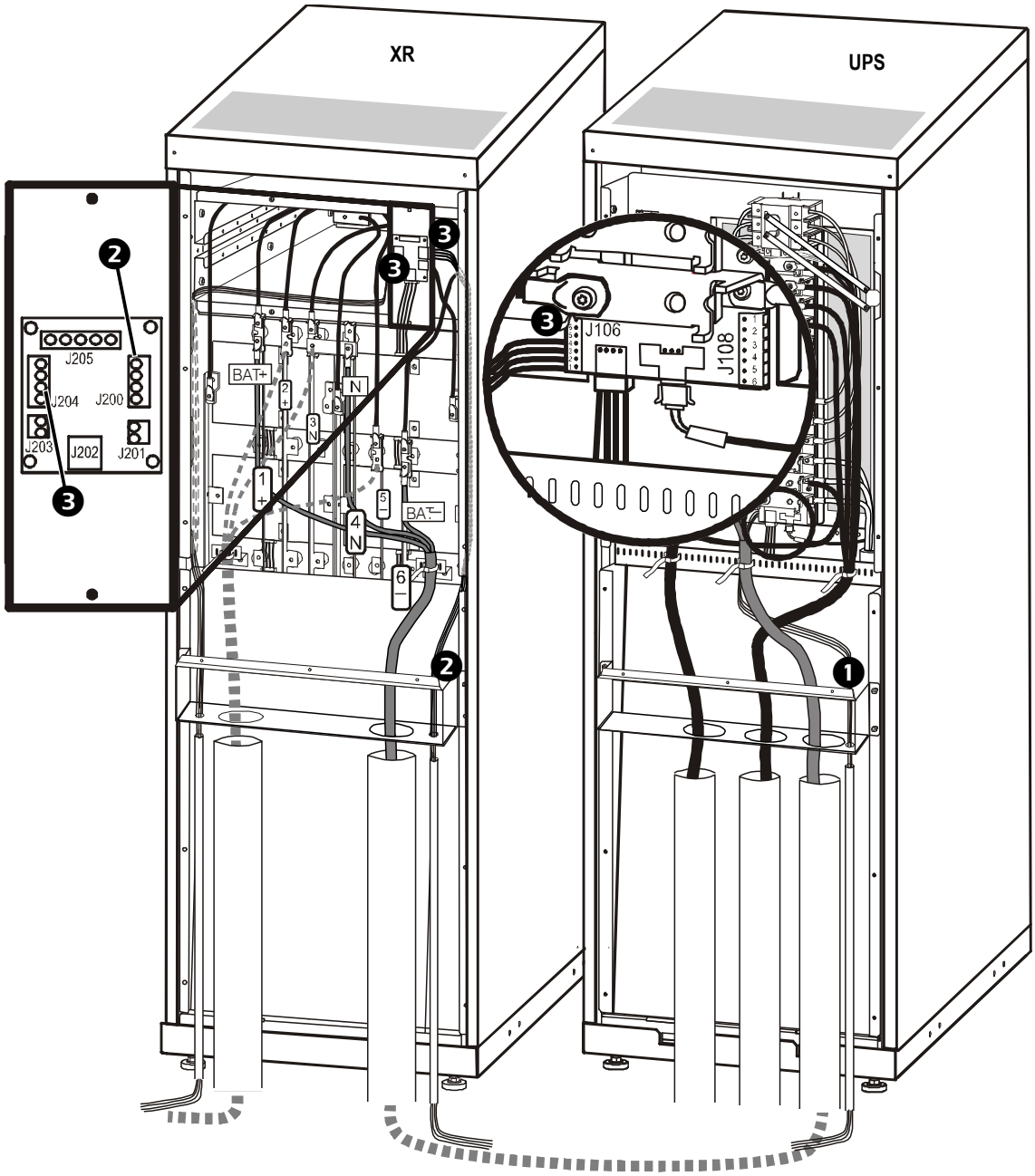
❺ Feed the cable up into the conduit box (optional for 400 V versions) on XR2.

❻ Connect the – cable to busbar no. 6 (–), the N cable to busbar no. 4 (N), and the + cable to busbar no. 1 (+) in XR2.

❼ Attach the top part of the conduit box (if applicable).

Note: If you use floor anchoring, carry out the floor anchoring procedures now.

Install the communication cables.



❶ Feed the cable from J106 in the UPS down through the conduit (if appliccable).

❷ Run the cable up into the XR conduit and connect it to the J200 in the XR Battery Enclosure.

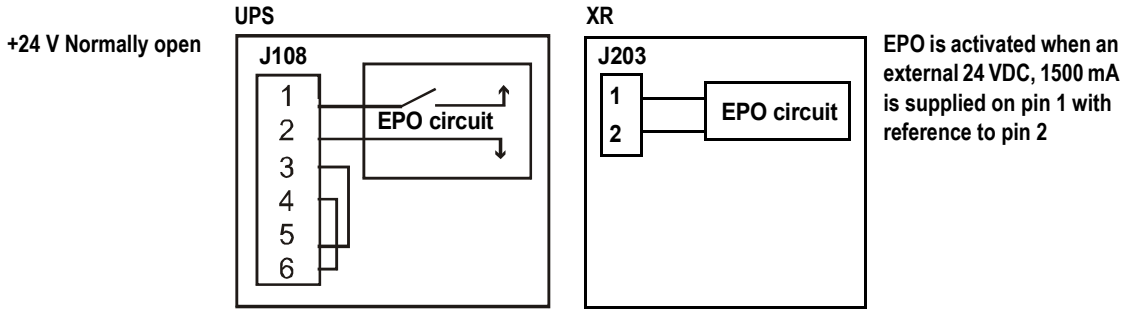
❸ If you use an XR2, run the cable from J204 in XR1 to J200 in XR2.

Connect the EPO

Connect the EPO to the UPS and the XR Battery Enclosure

Note: For the connection between the UPS and the XR, please refer to the EPO wiring section in the installation sheet delivered with the UPS unit.

1. Connect the EPO (Emergency Power Off) to J108 in the UPS and to J203 in the XR Battery Enclosure by guiding the cable through conduits as described on the previous page.
2. Connect the EPO by using this configuration:



See *"EPO requirements" on page 30* under *"Specifications"* .

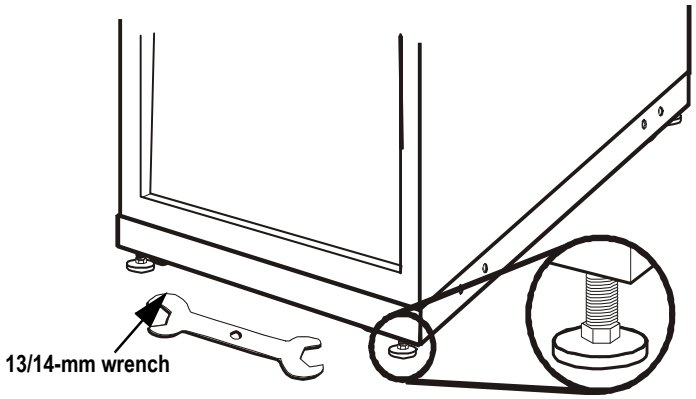
Final Mechanical Assembly

Level the Enclosures

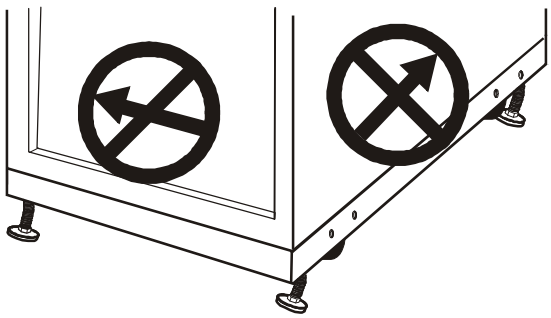
Note: Verify that the installation has been electrically wired before setting the leveling feet.

Level the enclosures

Set the leveling feet to ensure that the UPS is completely horizontal when it is in its final operating position. Use a 13/14-mm wrench (shipped with the UPS) to adjust all four leveling feet from the front to the back, and from the left to the right, until the pads make solid contact with the floor. Use a bubble level to check that the enclosure is horizontal.

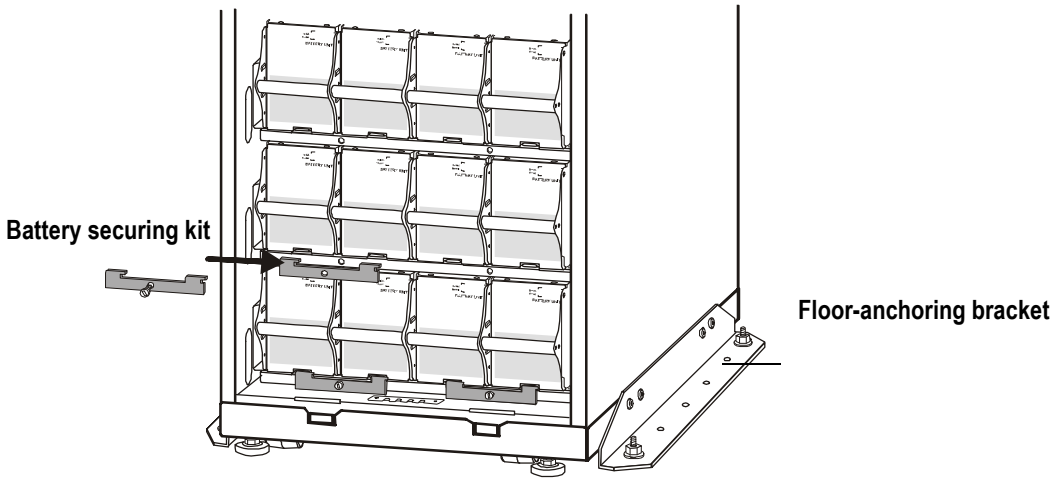


Caution: To avoid equipment damage, do not push or pull the UPS after the leveling feet have been lowered.



Install Battery Modules and Battery Securing (Optional)

Floor-anchoring brackets and battery-securing kit options



❶ Install the batteries by pushing them all the way into the enclosure.

❷ Install the battery securing kit to hold the batteries firmly in place.

❸ Install the floor-anchoring bracket (reuse of transport brackets).

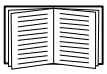
❹ Reinstall the front panel by performing the procedure described in the section *"Reinstall the front panel" on page 7.*

APC kit	Part no.
APC part number for battery-securing kit	SUVTOPT003

Reinstall the Enclosure Plates

Reinstall the cable landing cover plates and the bottom plates

1. Reinstall the cable landing cover plates on the XR Battery Enclosure(s)
2. Install the upper part of the conduit box (if applicable) on all enclosures.
3. Reinstall the bottom plates on the UPS and the XR Battery Enclosure(s).



For further information on how to wire the UPS, see:

- Installation Sheet 990-1957 for MGE Galaxy 3500 3:3 10-30 kVA 208/220 V
- Installation Sheet 990-2258 for MGE Galaxy 3500 3:3 10-40 kVA 380/400/415 V
- Installation Sheet 990-2387 for MGE Galaxy 3500 3:1 15-40 kVA 380/400/415 V

Specifications

Battery, Cable, EPO and Torque Specifications

Battery voltage and current

XR Battery Enclosure	30 kVA	40 kVA
Battery voltage (nominal)	± 192 VDC	± 192 VDC
Battery current (at full load)	69.4 A at ± 192 V	87.9A at ± 192V
Max. current (at end of discharge)	86.6 A at ± 154 V	110.1A at ± 154V
If the XR Battery Enclosure is customer-supplied, please refer to product-specific data.		

Recommended cable sizes

North America	Europe, Middle East, Asia
208/220 V	**380/400/415 V**
BAT+, N, BAT– 35 mm^2 1 AWG 75°C copper wire	BAT+, N, BAT– 50 mm^2 75° C copper wire

Note: Power terminal lug diameter: minimum 0.2 in/6 mm.
Torque value: 45 lbf-in/7 Nm.

Note: Use Molex lug type or equivalent, and follow the manufacturer's specifications.

EPO requirements

SELV voltage	24 VDC
Current:	1500 mA

Note: Use a 24V, cabling and multi-contact EPO switch as necessary.

Torque specification

Bolt size	
Isolators: M5	45 lbf-in/7 Nm

Post-Installation Checklist

Use the following procedure to verify that the XR Battery Enclosure has been installed correctly:

❑	Ensure that all busbars/cables between the XR Battery Enclosure(s) and the UPS are correctly installed.
❑	Ensure that the DC breaker (if available) in the XR Battery Enclosure is in the OFF or STAND-BY position.

Note: If a problem occurs, call Customer Support (see the back cover).

❑	Install the front cover.

Note: If you have purchased any optional equipment, refer to the product-specific guides.

See Operation Manual 990-2386 located in the documentation storage area behind the front panel of the UPS and XR Battery Enclosure(s).

APC Worldwide Customer Support

Customer support for this or any other APC product is available at no charge in any of the following ways:

- Visit the APC Web site to access documents in the APC Knowledge Base and to submit customer support requests.
  - **www.apc.com** (Corporate Headquarters)
    Connect to localized APC Web sites for specific countries, each of which provides customer support information.
  - **www.apc.com/support/**
    Global support searching APC Knowledge Base and using e-support.
- Contact the APC Customer Support Center by telephone or e-mail.
  - Local, country-specific centers: go to **www.apc.com/support/contact** for contact information.

For information on how to obtain local customer support, contact the APC representative or other distributors from whom you purchased your APC product.

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